

NASA SPACE OPERATIONS SYSTEM*

Richard P. Mathison
Chief Engineer
Telecommunications and Mission Operations Directorate
Jet Propulsion Laboratory
California Institute of Technology
Pasadena California

Abstract

The international and **national** environment for the conduct of **space** missions has been changing **significantly** over the last several years. **The** changes require that the NASA Space Operations System substantially increase its productivity and reduce the cost of providing space operations **services**. The NASA Space Operation System consists of **all** the functions, **services**, tools, physical elements, and people that NASA uses to do space mission operations. **The** designers of the System of today optimized the performance for individual missions in the deep space, near Earth, human exploration, and suborbital mission domains. Consequently, there is significant duplication of functions and insufficient **interoperability** among the networks and mission control centers in the System. Meeting the **challenge** requires that the System provide data **acquisition**, space vehicle control, mission operation services, and products with the same ease and **reliability** as acquiring services and products from a public utility. It should be essentially transparent to the user and the user should get reliable service with minimal knowledge about the details of the System. The System should be **scaleable**. It should adapt to match the capacity and performance requirements of future missions. Appropriate elements of the System should interconnect functionally (not just physically networked) **to** provide customers a single standardized interface for services such as telemetry or metric tracking. This single service interface is the interface to request services and the interface for data as a result of service execution. **This** paper describes these characteristics that the NASA Space Operations System should have by about 2010.

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